JOURNAL OF METALS

Index to Volume 14 **January-December 1962**

Feature Articles

I. Subjects

A

AIME Annual Meeting:
review ..... May 364
Air:
oxygen-enriched, in Cu converting ..... Sept 641
Alloys:
chemistry of the transition elements ..... May 371
dispersion strengthened Aug 561, Aug 563
effect of microstructure on hi-temp properties ..... May 360
Alumina:
acid extraction of ..... Feb 121
refining of ..... June 422
whiskers ..... Nov 809
Aluminum:
carbides and nitrides in reduction cells ..... Feb 129
extractive metallurgy of ..... June 442
new processes and materials ..... June 445
production of ..... June 444
submerged-arc smelting of ..... Feb 126
Anaconda:
reduction works ..... Nov 824
converting with enriched air ..... Sept 641
Arc melting:
in high vacuum environments ..... Mar 200
tungsten ..... June 418
Argentina:
iron and steel industry ..... Jan 39
San Nicolas steel plant ..... Jan 43
Australia:
acid extraction of alumina ..... Feb 121
coke and steel developments ..... May 375

B

Basic Brick:
mechanisms of deterioration ..... Mar 218
Basic Oxygen Steelmaking:
See also individual processes
Bath-slag reactions in Kaldo process ..... July 509
controlled heat balance ..... July 487
French Kaldo expansion ..... July 505
growth of LD process ..... July 509
in Cleveland ..... July 514
in Colorado ..... July 516
in Japan ..... July 518
in the Netherlands ..... July 510
iron oxide formation ..... July 521
OLP process technology and metallurgy ..... Aug 579
vertical lime kiln ..... Sept 638
Beneficiation:
dry process for iron ore ..... May 375
Beryllides:
discussion of ..... Aug 568
preparation and fabrication of ..... Aug 575
Beryllium:
conference review ..... Feb 147
electron-beam melting of ..... Nov 812
fluoride extraction process ..... Aug 571
forging powder ..... Feb 149
high purity ..... Feb 148
hot pressing of ..... Feb 147
intermetallic compounds ..... Aug 575
working of ..... Feb 147
Boron:
electron-beam melting of ..... Nov 812
Blast Furnace:
See also Ironmaking
automatic belt charging ..... Oct 754
charcoal furnace Fayette, Michigan ..... Oct 780
future of ironmaking ..... Oct 749
future practice ..... Apr 295
historical Hopewell furnace ..... July 484
limitations of ..... Oct 759
practice with pellets and natural gas ..... Apr 306
quenched burden studies ..... May 359
solid fuel injection ..... June 436
thermodynamics of operation ..... Apr 308
Blast Furnace, Coke Oven, and Raw Materials Committee:
conference program ..... Mar 197
conference review ..... June 432
Committee report ..... Apr 287
plant trip ..... Apr 277
Borides:
in aluminum reduction cells ..... Feb 129
Brazil:
iron and steel industry ..... Jan 35
Brooklyn Navy Yard:
See NY Naval Shipyard
Bureau of Mines:
metallurgy research center ..... Mar 214

C

Canada:
Conference of Metallurgists ..... Nov 842
continuous casting ..... Feb 141
Carbides:
in aluminum reduction cells ..... Feb 129
reaction with tungsten ..... June 426
Carbon:
in aluminum industry ..... June 443
influence on fume formation in steel ..... July 521
Casting:
See also continuous casting
beryllides ..... Aug 577
small specimens of refractory metals ..... June 411
Cesium:
metallurgy of ..... May 355
Ceramics:
vapor phase ..... Oct 770
Charging:
automatic, of BFs ..... Oct 754
Chile:
Huachipato steel plant ..... Jan 48
iron and steel industry ..... Jan 40
Montos Blancos copper refinery ..... Jan 51
Cleveland:
basic oxygen steelmaking ..... July 514
Coal:
in blast furnace injections ..... Jan 15, Apr 296, June 436
Cobalt:
electron-beam melting ..... Nov 812
Coking:
continuous process ..... May 376
Colorado:
basic oxygen steelmaking ..... July 516
Colombia:
iron and steel industry ..... Jan 41
Columbium:
beryllide ..... Aug 568
beryllide fabrication ..... Aug 575
open-arc melting of ..... Mar 200
Composites:
Al_2O_3-whisker-metal ..... Nov 809
Continuous Casting:
in Canada ..... Feb 141
in Europe ..... Feb 140
in the Saar ..... Feb 142
of steel ..... Feb 140
of steel for hot piercing ..... Feb 144
Copper:
Anaconda reduction works ..... Nov 824
dispersion-strengthened alloys ..... Aug 563
extracting and refining of ..... Jan 51
oxygen in converting matte ..... Sept 641

D

Deposition:
of ferromagnetic thin films ..... Mar 209
Diffraction:
microscopy ..... Sept 661
Ductility:
of refractory metals ..... Aug 595
superplasticity ..... Dec 914

E

Eastern Germany:
high-temp materials meeting review ..... Aug 599
pure materials symposium review ..... Mar 229
steel industry ..... Nov 806
Electric Furnace:
See also arc melting
automatic power control ..... Dec 912
19th conference review ..... Mar 225
20th conference program ..... Dec 871
executive committee report ..... Dec 877
ferrochrome production in ..... Dec 897
for smelting aluminum ..... Feb 126
open-arc melting of tungsten ..... June 418
phosphorus smelting in ..... Dec 902
plant trips ..... Dec 880
Plasmarc furnace and melting ..... Dec 907
Electron Beam:
applications to refractory metals Mar 204
induced recrystallization ..... Oct 764
in microelectronics ..... June 441
melting metals and compounds ..... Nov 812

symposium review ..... June 438
Temescal developments ..... Nov 800
welding ..... June 440
Engineering:
a national academy ..... May 380
research needs, 1965-85 ..... July 527
vs science ..... May 345
Extrusion:
of beryllides ..... Aug 577

F

Fall Meeting (1961) of the Metallurgical Society:
review ..... Feb 136
Fatigue:
fracture in pure metals ..... Nov 828
Ferroalloys:
carbon content of ..... Mar 228
Ferrochrome:
by the Strategic-Udy process ..... Dec 897
Flotation:
of selenium ..... June 429
of siliceous iron ores ..... Apr 299
Fluoride Process:
for beryllium extraction ..... Aug 571
Forging:
beryllium powder ..... Feb 149
Fracture:
fatigue, in pure metals ..... Nov 828
international symposium program ..... July 494
France:
Kaldo plant expansion ..... July 505
automatic blast furnace charging Oct 754

G

Galvanizing:
production of low-lead zinc ..... Apr 315
Graphite:
reaction with tungsten ..... June 427
status and future of ..... May 351
Grate Kiln:
pelletizing iron concentrates ..... Apr 303

H

Hafnium:
electron-beam melting ..... Nov 813
Hydrogen:
vacuum analysis of ..... Aug 584

I

Iron and Steel Institute (of London):
general meeting review ..... Aug 590
Iron:
spray refining ..... June 436
Ironmaking:
See also individual processes
automatic charging of BF ..... Oct 754
BF practice with pellets and natural gas ..... Apr 306
future blast furnace practice ..... Apr 295
future of ..... Oct 749
grate-kiln pelletizing ..... Apr 303
historic charcoal smelter ..... Oct 780
historic Hopewell charcoal furnace ..... July 484
in Latin America ..... Jan 34
limits of modern BFs ..... Oct 759
quenched BF burden study ..... May 359
solid fuel injection in BF ..... Jan 15
Apr 296
June 436
thermodynamics of blast furnace operation ..... Apr 308
Iron Oxide:
formation of fume ..... July 521

J

Japan:
basic oxygen steelmaking ..... July 518

K

Kaldo:
bath-slag reactions ..... July 502
expands in France ..... July 505

L

Latin America:
iron and steel industry ..... Jan 34
iron and steel institute ..... Jan 25
meeting review ..... Oct 755
steel industry ..... Jan 28
LD:
See also basic oxygen steelmaking
controlled heat balance ..... July 497
growth of process ..... July 509
in Japan ..... July 518
OLP process technology and metallurgy ..... Aug 579
Leaching:
of tungsten ores ..... June 416
copper at Mantos Blancos ..... Jan 51
Lead:
in stainless steel ..... Mar 227
Lime:
vertical kiln ..... Sept 638

M

Magnesium:
annual convention review ..... Feb 108
lithium alloys ..... Feb 108
Magnetic Roasting:
of iron ores ..... Apr 300
Magnetic Separation:
of iron ores ..... Apr 301
Manganese:
Anaconda reduction works ..... Nov 824
Materials:
advanced electronic conference program ..... July 542
dispersion-strengthened alloys Aug 561
Aug 563
ferromagnetic thin films ..... Mar 209
graphite and refractory compounds ..... May 351
high purity ..... Mar 229
superconducting ..... May 367
Materials Research:
Federal support of ..... Mar 181
Materials Science:
ARPA's program ..... Sept 666
basic research in ..... Sept 671
impact on universities ..... May 347
Matte:
copper, oxygen in conversion ..... Sept 641
Metalworking:
cast structures ..... Feb 142
chemical milling of Mg alloys Feb 158
extrusion of beryllides ..... Aug 577
forging beryllium powder ..... Feb 149
mechanical working conference review ..... May 378
Mexico:
iron and steel industry ..... Jan 37
Microstructure:
effect on high temp properties May 369
Milling:
chemical ..... Feb 158
Minnesota:
section meeting review ..... Apr 299

N

National Open Hearth Steel Committee:
45th conference program ..... Mar 194
45th conference review ..... June 432
committee report ..... Apr 281
plant trip ..... Apr 277
Netherlands:
basic oxygen steelmaking ..... July 510
New Mexico:
recovery of selenium ..... June 429
NY Naval Shipyard:
AIME visit ..... July 538
New York University:
beryllium conference review ..... Feb 147
Nickel:
dispersion-strengthened alloys Aug 561
Aug 563
Kristiansand refinery ..... Sept 648
Nitrogen:
vacuum analysis of ..... Aug 584
Norway:
Kristiansand Ni refinery ..... Sept 648

O

OLP Process:
technology and metallurgy of ..... Aug 579
Open hearth:
cold-metal practice with oxygen Apr 292
hot-metal practice with oxygen Apr 289
oxygen in 500-ton furnace ..... June 435
refractories ..... Mar 218
solid material accumulation ..... June 434
Oxidation:
of refractory metals ..... Aug 598
Oxides:
research with tungsten ..... June 425
Oxygen:
enriched air in Cu converting ..... Sept 641
lime powder technology and metallurgy ..... Aug 579
use in 500-ton open hearth furnace ..... June 435
vacuum analysis of ..... Aug 584

P

Pelletizing:
iron concentrates ..... Apr 303
Peru:
Chimbote steel plant ..... Jan 46
iron and steel industry ..... Jan 42
Petrography:
quenched blast furnace burden study ..... May 359
Phenolic Resin:
reaction with tungsten ..... June 428
Phosphorus:
electric furnace smelting ..... Dec 902
Pittsburgh:
off-the-record meeting review ..... Feb 157
Plasmare:
melting and furnace ..... Dec 907
Powder Metallurgy:
conference review ..... Aug 558
dispersion-strengthened alloys ..... Aug 561
Aug 563
forging beryllium ..... Feb 149
of beryllium ..... Feb 147
of tungsten ..... June 421

R

Recrystallization:
electron beam induced ..... Oct 764
Refractories:
for aluminum reduction cells ..... Feb 129
status of technology ..... Mar 218
Refractory Compounds:
status and future of ..... May 351
Refractory Metals:
See also individual metals
casting small specimens ..... June 411
consolidation of ..... Aug 598
conversion of ..... Aug 599
ductility of ..... Aug 595
electron-beam melting of ..... Mar 206
electron-beam purification ..... Mar 205
electron-beam sintering ..... Mar 207
electron-beam welding of ..... Mar 206
high purity ..... Aug 597
oxidation of ..... Aug 598
processing of ..... Feb 138
protective coatings ..... Feb 137
symposium program ..... Mar 187
symposium review ..... Aug 595
Research:
basic, in the metals industry ..... Dec 920
engineering research needs ..... July 527
in materials science ..... Sept 671
Research Facilities:
USBM metallurgy research center ..... Mar 214
Rocky Mountain Mineral Conference:
meeting report ..... Nov 821
Rubidium:
metallurgy of ..... May 355

S

Salary Survey: ..... Sept 664
Science:
vs engineering ..... May 345
Scientific Publication:
origin and support of ..... May 334
Selenium:
extractive metallurgy of ..... June 429
Senior Class:
Met and MetE student list ..... Jan 63
Slag:
reactions with bath in Kaldo process ..... July 502
Slides:
preparation of ..... Sept 632
Steelmaking:
See also individual processes
Acme-Newport plant ..... Dec 880
basic oxygen in Cleveland ..... July 514
basic oxygen in Colorado ..... July 516
basic oxygen in Japan ..... July 518
bath-slag reactions in Kaldo ..... July 502
continuous process ..... May 377
controlled heat balance in LD ..... July 497
electric furnace conf. review ..... Mar 225
Great Lakes Steel Corp's. plant Apr 277
growth of LD process ..... July 509
in Eastern Germany ..... Nov 806
in Latin America ..... Jan 28
Jan 34
in the Netherlands ..... July 510
iron oxide fume formation ..... July 521
OLP process ..... Aug 579
oxygen in 500-ton OH ..... June 435
oxygen in the open hearth
cold-metal practice ..... Apr 292
hot-metal practice ..... Apr 289
solid material accumulation in OH ..... June 434
vacuum techniques ..... Mar 226
Strain Hardening:
pure metals ..... Nov 828
Strategic-Udy:
ferrochrome process ..... Dec 897
Strength:
effects of surface and environment ..... Feb 139
Superconductivity:
effects of impurities ..... May 368
metallurgical aspects ..... May 368
status of ..... Nov 836
structural and material aspects ..... May 366
Superplasticity:
and related phenomena ..... Dec 914
Sweden:
Jerkontoret meeting report ..... Sept 657

T

Tantalum:
beryllide ..... Aug 568
open arc melting of ..... Mar 200
Thermodynamics:
of blast furnace operation ..... Apr 308
Thin Films:
deposition of ..... Mar 209
Thoria:
in dispersion-strengthened alloys Aug 561
Tin:
in stainless steel ..... Mar 227
Titanium:
present status ..... Aug 588
symposium review ..... Aug 588
Transformations:
electron beam induced ..... Oct 764
Transition Elements:
electronic structure and alloy chemistry of ..... May 371
Tungsten:
arc melting of ..... June 418
electron-beam melting of ..... Nov 812
extractive metallurgy ..... June 413
high-temperature reactivity ..... June 424
hot pressing of ..... June 421
liquid-liquid separation of ..... June 417
open-arc melting of ..... Mar 200
ores and concentrates ..... Jun 414

U

United Engineering Center:
dedication ..... Jan 57
United Kingdom:
iron and steel meeting review ..... Aug 590

V

Vacuum:
analysis of metals ..... Aug 584
arc melting in ..... Mar 200
degassing techniques for steel ..... Mar 226
deposition of thin films ..... Mar 209
hot pressing of beryllides ..... Aug 576
melting of tungsten ..... June 418
steel degassing techniques ..... Mar 226
Vanadium:
electron-beam melting ..... Nov 812
Vapor Phase:
metallurgy and ceramics ..... Oct 770
Venezuela:
iron and steel industry ..... Jan 41

W

Whisker:
reinforced metals ..... Nov 809

X

X-ray:
diffraction microscopy ..... Sept 661

Z

Zinc:
Amax refiner ..... Sept 653
Anaconda reduction works ..... Nov 824
for continuous galvanizing ..... Apr 315
Zirconium:
beryllide ..... Aug 568
beryllide fabrication ..... Aug 575

II. Titles

A

Alumina by Acid Extraction ..... Feb 121
Amax Zinc Refiner ..... Sept 653
Anaconda Reduction Works in Retrospect ..... Nov 824
Annual Meeting at Times Square ..... May 364
Arc Melting in High-Vacuum Environments ..... Mar 200
Arc Melting of Tungsten ..... June 418
Argentina's First Integrated Steel Plant ..... Jan 43
Australian Research Features Continuous Coking and Steelmaking ..... May 375
Automatic Blast Furnace Charging by Conveyer Belts ..... Oct 754
Automatic Power Control for Electric-Arc Furnaces ..... Dec 912

B

Basic Oxygen Operations at Cleveland ..... July 514
Basic Oxygen Steel at Hoogovens July 510
Basic Research in Materials Science, Industry, University, or Government? ..... Sept 671
Bath-Slag Reactions in the Kaldo Process ..... July 502
Beryllides—A Discussion ..... Aug 568
Beryllium Extracted by the Fluoride Process ..... Aug 571
Beryllium Intermetallic Compounds—Their Preparation and Fabrication ..... Aug 575
Beryllium Metallurgy Conference Feb 147
Blast Furnace Practice of Tomorrow ..... Apr 295
Blast Furnace Practice with Pellets and Natural Gas ..... Apr 306
Butte and the Rocky Mountain Mineral Conf. ..... Nov 821

C

Canada's First Conference of Metallurgists ..... Nov 842
Case for Whisker Reinforced Metals, The ..... Nov 809
Casting Small Specimens of Refractory Metals ..... June 411
Charcoal Iron Smelter Becomes Historic Site ..... Oct 780
Chemical Processing Tungsten Ores and Concentrates ..... June 413
Cobo Hall, Ft. Shelby, and Metallurgists ..... Feb 136
Continuously Cast Steel for Hot Piercing ..... Feb 144
Controlled Heat Balance in the LD Process ..... July 497
Copper Extraction and Refining at Mantos Blancos ..... Jan 51

D

Dispersion-Strengthened Alloys Become Commercials ..... Aug 561
Dispersion-Strengthened Copper and Nickel Alloys ..... Aug 563
Duluth and Taconites ..... Apr 299

E

Effect of Microstructure on High Temperature Properties ..... May 369
Electric Furnace Conference Plant Trips Acme-Newport Steel Co. Dec 880
Sawbrook Steel Castings Co. Dec 881
Electric Furnace Steelmaking Promotes Vacuum Techniques ..... Mar 225
Electron Beam Applications to Refractory Metals ..... Mar 204
Electron Beam Induced Recrystallization ..... Oct 764
Electron Beam Melting ..... Nov 812
Electron Beam Symposium in Boston ..... June 438
Electronic Structure and Alloy Chemistry of Transition Elements ..... May 371
Engineering Research Needs, 1965-1985 ..... July 527
Evaporation of Ferromagnetic Thin Films ..... Mar 208
Expanding Latin American Steel Industry, The ..... Jan 28
Extractive Metallurgy Division: Annual Stag Luncheon and Business Meeting ..... May 372
Extractive Metallurgy of Aluminum ..... June 442

F

Fatigue Fracture in Pure Metals Nov 828
Federal Support of Materials Research ..... Mar 181
Forging Beryllium Powder ..... Feb 149
Formation of Iron Oxide Fume, The ..... July 521
Future of Ironmaking ..... Oct 749

G

Grate-Kiln Pelletizing of Iron Concentrates ..... Apr 303
Growth of the LD Process ..... July 509

H

High-Carbon Ferrochrome by the Strategic-Udy Process ..... Dec 897
Huachipato—Steel for Chile and South America ..... Jan 48

I

Impact of Materials Science on Universities, The ..... May 347
Interdisciplinary Laboratory Program in Materials Science ..... Sept 666
Introduction to Hot-Pressed Tungsten ..... June 421

J

Journey to the Isles ..... Aug 590

K

Kaldo Moves Forward ..... July 505
Kristiansand Nickel Refinery, The Sept 648

L

Latin America's Iron and Steel Industries ..... Jan 34
Latin American Iron and Steel Institute ..... Jan 25
Limits of Modern Blast Furnaces, The ..... Oct 759

M

Magnesium in Focus ..... Feb 108
Mechanical Working Conference Features Flat Rolled Products May 378

N

NOHC and BFCO&RMC Converge on Detroit ..... June 432

O

On-Site Lime for Basic Oxygen Steel ..... Sept 638
Operation of a Bureau of Mines Metallurgy Research Center ..... Mar 214
Oriented Basic Research in the Metals Industry ..... Dec 920
Origin and Support of Scientific Publications ..... May 334
Oxygen-Enriched Air For Converting Copper Matte ..... Sept 641
Oxygen in the Open Hearth ..... Apr 289
Oxygen Steelmaking—Key to Japan's Increasing Capacity ..... July 518

P

Petrographic Examination of a Quenched Blast-Furnace Burden ..... May 359
Phosphorus Furnace Operations ..... Dec 902
Plasmarc Furnace, A New Concept in Melting Metals ..... Dec 907
Problems of the East German Steel Industry ..... Nov 806
Production of Low-Lead Zinc for Continuous Galvanizing ..... Apr 315
Pueblo's Oxygen Steelmaking Operations ..... July 516
Pure Materials in Science and Technology ..... Mar 229

R

Recovering Selenium From Sandstone Ores of New Mexico ..... June 429
Refractory Carbides and Borides for Aluminum Reduction Cells Feb 129
Refractory Metals Symposia ..... Aug 595
Rubidium and Cesium ..... May 355

S

Salary Survey, 1961 ..... Sept 644
Science Vs Engineering ..... May 345
Senior Class, The ..... Jan 63
Siderurgia—America Latina ..... Oct 775
Status and Future of Graphite and Refractory Compounds ..... May 351
Status of Basic Refractory Technology ..... Mar 218
Steelmaking in Peru ..... Jan 46
Status of Superconductivity ..... Nov 836
Submerged-Arc Furnaces for Smelting Aluminum Ores ..... Feb 126
Superconductivity and Superconductors ..... May 367
Superplasticity and Related Phenomena ..... Dec 914
Sweden—Key to Metallurgical Progress ..... Sept 657

T

Technology and Metallurgy of the OLP Process ..... Aug 579
Thermodynamics of Blast Furnace Operation ..... Apr 308
Titanium in 1975 ..... Aug 588
Tungsten—Its High-Temperature Reactivity ..... June 424

V

Vacuum Analysis of Metals for Oxygen, Nitrogen, and Hydrogen ..... Aug 584
Vapor Phase Metallurgy and Ceramics ..... Oct 770
Visit to Great Lakes Steel Corp., A Apr 277
Visiting Hopewell Furnace ..... July 484

W

We Dedicate the United Engineering Center ..... Jan 57
What Is Being Done About A National Academy Of Engineering ..... May 380

X

X-Ray Diffraction Microscopy ..... Sept 661

III. Authors and Companies

A

Acme-Newport Steel Co.: *Electric Furnace Conference Plant Trips* Dec 880
Adam-Gironne, Jean and Rocquet, Paul: *Bath-Slag in the Kaldo Process* July 502
Aerojet-General Corp.: *Introduction to Hot-Pressed Tungsten* June 421
Aerospace Corp.: *Vacuum Analysis of Metals for Oxygen, Nitrogen, and Hydrogen* Aug 584
Alden, T. H.: *Fatigue Fracture in Pure Metals* Nov 828
Allio, R. J.: *Federal Support of Materials Research* Mar 181
Alloyd Electronics Corp.: *Pure Materials in Science and Technology —An International Symposium held in Eastern Germany* Mar 229
Alloyd Electronics Corp.: *Electron Beam Symposium in Boston* June 438
Alloyd Electronics Corp.: *Vapor Phase Metallurgy and Ceramics* Oct 770
Aluminium Laboratories Ltd.: *Extractive Metallurgy of Aluminum* June 442
Aluminum Company of America: *Extractive Metallurgy of Aluminum* June 442
American Potash & Chemical Corp.: *Rubidium and Cesium; Where are they going?* May 355
American Smelting & Refining Co.: *Production of Low-Lead Zinc at Amarillo, Texas* Apr 317
American Zinc, Lead and Smelting Co.: *Production of Low-Lead Zinc at Dumas, Texas* Apr 318
Anaconda Co.: *Oxygen-Enriched Air for Converting Copper Matte* Sept 641
Anaconda Co.: *Anaconda Reduction Works in Retrospect* Nov 824
Archibald, F. R.: *The Kristiansand Nickel Refinery* Sept 648
Arentzen, Charles: *Oxygen-Enriched Air for Converting Copper Matte* Sept 641
Armco Steel Corp.: *Oxygen in the Open Hearth; II. Cold-Metal Practice* Apr 292
Armour Research Foundation: *Effect of Microstructure on High Temperature Properties* May 369
Aschoff, W. A. and Baroch, E. F.: *Electron Beam Applications to Refractory Metals* Mar 204
Atomics International, div. of North American Aviation, Inc.: *Berylides—A Rebuttal* Aug 569
Autonetics, div. of North American Aviation Corp.: *Evaporation of Ferromagnetic Thin Films* Mar 208
Autonetics, div. of North American Aviation Corp.: *Electron Beam Induced Recrystallization* Oct 764

B

Bakish, R.: *Pure Materials in Science and Technology* Mar 229
Electron Beam Symposium in Boston June 438
Bakish, R., et al: *Vapor Phase Metallurgy and Ceramics* Oct 770
Banerjee, Bani R.: *Oriented Basic Research in the Metals Industry* Dec 920
Barbis, Rene: *Steelmaking in Peru* Jan 46
Barber, J. C. and Marks, E. C.: *Phosphorus Furnace Operations* Dec 902
Baroch, E. F. and Aschoff, W. A.: *Electron Beam Applications to Refractory Metals* Mar 204
Battelle Memorial Institute: *Status of Superconductivity* Nov 836
Titanium in 1975 Aug 588
Beck, Paul A.: *Electronic Structure and Alloy Chemistry of Transition Elements* May 371
Behrndt, K. H.: *Evaporation of Ferromagnetic Thin Films* Mar 208
Bell, Maurice E.: *The Impact of Materials Science on Universities* May 347
Bell Telephone Laboratories: *Superconductivity and Superconductors* May 367
Berkhahn, R. W. and Urich, D. M.: *Grate-Kiln Pelletizing of Iron Concentrates* Apr 303
Bertea, O., et al.: *Electron-Beam Melting—Does It Improve the Properties of Metals and Compounds?* Nov 812
Berthold, C. E.: *Rubidium and Cesium; Where are they going?* May 355
Beryllium Corp.: *Beryllium Extracted by the Fluoride Process* Aug 571
Bhappu, Roshan B.: *Recovering Selenium From Sandstone Ores of New Mexico* June 429
Blackwell Zinc Co. Inc.: *Amax Zinc Refiner* Sept 653
Production of Low-Lead Zinc at Blackwell, Oklahoma Apr 316
Boyd, James: *Leadership Development—A question of survival!* May 372
Brenner, S. S.: *The Case for Whisker Reinforced Metals* Nov 809
Breuer, R. G.: *Extractive Metallurgy of Aluminum; Alumina I* June 442
Bridgeport Brass Co.: *Electron-Beam Melting—Does It Improve the Properties of Metals and Compounds?* Nov 812
British Aluminium Co. Ltd.: *Refractory Carbides and Borides for Aluminum Reduction Cells* Feb 129
British Iron and Steel Research Association: *Automatic Power Control for Electric-Arc Furnaces* Dec 912
Broken Hill Proprietary Co. Ltd.: *Australian Research Features Continuous Coking and Steelmaking* May 375
Butler, T. E. and Morgan, R. P.: *Arc Melting in High-Vacuum Environments* Mar 200
Arc Melting of Tungsten June 418

C

Campbell, C. G.: *Pueblo's Oxygen Steelmaking Operations* July 516
Carnegie Institute of Technology: *Science Vs Engineering* May 345
Carus, H. D.: *Production of Low-Lead Zinc at La Salle, Ill.* Apr 319
Cass, A. Carl: *Latin America's Iron and Steel Industries* Jan 34
Chang, W. H., et al: *Refractory Metals Symposium* Aug 595
Chemical and Metallurgical Research, Inc.: *Submerged-Arc Furnaces for Smelting Aluminum Ores—A substitute for the electrolytic process?* Feb 126
Cieslicki, M. E.: *Forging Beryllium Powder* Feb 149
Clay, D. D.: *Mechanical Working Conference* May 378
Cleveland-Cliffs Iron Co.: *Grate-Kiln Pelletizing of Iron Concentrates* Apr 303
Clough, W. R., et al: *Effect of Microstructure on High Temperature Properties* May 369
Colmant, R. H.: *Kaldo Moves Forward* July 505
Colorado Fuel & Iron Corp.: *Pueblo's Oxygen Steelmaking Operations* July 516
Commonwealth Scientific and Industrial Research Organization: *Alumina by Acid Extraction* Feb 121
Cia. de Acero del Pacifico S.A.: *Huachipato—Steel for Chile and South America* Jan 48
Cook, N. E.: *Production of Low-Lead Zinc for Continuous Galvanizing* Apr 315
Cooper, T. D., et al: *Refractory Metals Symposium* Aug 595
Cooper Range Co.: *Leadership Development—A question of survival!* May 372
Cordier, J.: *The Limits of Modern Blast Furnaces* Oct 759
Cornell University: *X-Ray Diffraction Microscopy* Sept 681
Crucible Steel Company of America: *Oriented Basic Research in the Metals Industry* Dec 920

D

Dancy, T. E. and Schrader, C. F.: *Working of Cast Structures* Feb 142
Danes, A. Spencer: *Electric Furnace Conference Plant Trips—The Sawbrook Steel Castings Co.* Dec 881
Darken, L. S., et al: *The Formation of Iron Oxide Fume* July 521
Day, Frank H.: *Anaconda Reduction Works in Retrospect* Nov 824
Dell, M. B.: *Extractive Metallurgy of Aluminum; Carbon technology I* June 443
Dietz, J. R. et al.: *Blast Furnace Practice of Tomorrow* Apr 295
Dolloff, R. T. and Meers, J. T.: *Status and Future of Graphite and Refractory Compounds* May 351
Donaldson, J. W. and Douglas, W. S.: *High-Carbon Ferrochrome by the Strategic-Udy Process* Dec 897
Dormsjo, T. O.: *Siderurgia—America Latina* Oct 775
Douglas, W. S. and Donaldson, J. W.: *High-Carbon Ferrochrome by the Strategic-Udy Process* Dec 897
E. I. duPont de Nemours & Co., Inc.: *Refractory Metals Symposia; I. Chicago—Fourth Session* Aug 598

E

Electronics & Alloys Inc.: *Vapor Phase Metallurgy and Ceramics* Oct 770
Emerick, H. B.: *Continuously Cast Steel for Hot Piercing—An Evaluation* Feb 144
Enterline, S. M. and Pierce, J. F., Sr.: *Amax Zinc Refiner* Sept 653
Escobar, Roberto: *Huachipato—Steel for Chile and South America* Jan 48
Eusner, G. R.: *Status of Basic Refractory Technology* Mar 218
Export-Import Bank of Washington: *Latin America's Iron and Steel Industries* Jan 34

F

Falconbridge Nickel Mines Ltd.: *The Kristiansand Nickel Refinery* Sept 648
Fawcett, S. L., et al.: *Status of Superconductivity* Nov 836
Few, W. E. and Glasser, J.: *Submerged-Arc Furnaces for Smelting Aluminum Ores* Feb 126
Ford Motor Co.: *Blast Furnace Practice with Pellets and Natural Gas* Apr 306

G

Geist, N. S.: *Production of Low-Lead Zinc at Dumas, Texas* Apr 318
Gellar, C. A., et al.: *Vapor Phase Metallurgy and Ceramics* Oct 770
General Electric Co.: *Basic Research in Materials Science—Industry, University, or Government?* Sept 671
Beryllium Intermetallic Compounds—Their Preparation and Fabrication Aug 575
Effect of Microstructure on High Temperature Properties May 369
Fatigue Fracture in Pure Metals Nov 828
Origin and Support of Scientific Publications May 334
Refractory Metals Symposia; I. Chicago—Second Session Aug 597
1961 Salary Survey Sept 644
Geroulo, W. J. and Wood, D. L.: *1961 Salary Survey* Sept 644
Glasgow, J. A.: *Basic Oxygen Operations at Cleveland* July 514
Glasser, J. and Few, W. E.: *Submerged-Arc Furnaces for Smelting Aluminum Ores* Feb 126
Gokcen, N. A. and Tankins, E. S.: *Vacuum Analysis of Metals for Oxygen, Nitrogen, and Hydrogen* Aug 584
Grieveson, P., et al.: *The Formation of Iron Oxide Fume* July 521
Groat, M. E.: *Argentina's First Integrated Steel Plant* Jan 43

H

Haupin, W. E.: *Extractive Metallurgy of Aluminum; Aluminum production I* June 444
Hepworth, M. T.: *Casting Small Specimens of Refractory Metals* June 411
Hibbard, W. R., Jr.: *Basic Research in Materials Science; Industry, University, or Government?* Sept 671
Hiltz, R. H. and Lally, F. J.: *Tungsten —Its High-Temperature Reactivity* June 424
Hollingshead, E. A.: *Extractive Metallurgy of Aluminum; Aluminum production II* June 444
Hollomon, J. H.: *Engineering Research Needs 1965-1985* July 527
Hughen, M. L. and Stafford, D. H.: *Production of Low-Lead Zinc at Blackwell, Okla.* Apr 316

I

Ikeda, T., et al.: *Oxygen Steelmaking —Key to Japan's Increasing Capacity* July 518
Inland Steel Co.: *Oxygen in the Open Hearth; I. Hot Metal Practice* Apr 289
Working of Cast Structures Feb 142
Institute for Applied Physics of High Purity Materials: *Refractory Metals Symposia; II. Eastern Germany* Aug 599
IRSID: *The Limits of Modern Blast Furnaces* Oct 759
Technology and Metallurgy of the OLP Process Aug 579

J

Jaffee, R. I.: *Titanium in 1975* ..... Aug 588
Jones, E. S., et al.: *Effect of Microstructure on High Temperature Properties* ..... May 369
Jones, W. H., et al.: *Status of Superconductivity* ..... Nov 836
Jones & Laughlin Steel Corp.: *Basic Oxygen Operations at Cleveland* ..... July 514
Continuously Cast Steel for Hot Piercing—an evaluation Feb 144
Working of Cast Structures Feb 142
Joseph, Werner and Knobler, R. R.: *Copper Extraction and Refining at Mantos Blancos* ..... Jan 51
Justice, Kenton R.: *Electric Furnace Conference Plat Trips—Acme-Newport Steel Co.* ..... Dec 880

K

Kaiser Aluminum & Chemical Corp.: *Extractive Metallurgy of Aluminum* ..... June 442
Kaiser Engineers: *Growth of the LD Process* ..... July 509
Killian, R. D., Jr.: *Blast Furnace Practice with Pellets and Natural Gas* ..... Apr 306
Knobler, R. R. and Joseph, Werner: *Copper Extraction and Refining at Mantos Blancos* ..... Jan 51

L

Lally, F. J. and Hiltz, R. H.: *Tungsten—Its High-Temperature Reactivity* ..... June 424
Lamb, F. D.: *Operation of a Bureau of Mines Metallurgy Research Center* ..... Mar 214
Lanzing, P. W. A. and Smit, R.: *Basic Oxygen Steel at Hoogovens* July 510
Latin American Iron and Steel Institute (ILAFA): *Latin American Iron and Steel Institute* ... Jan 25
Levinson, D. W., et al.: *Effect of Microstructure on High Temperature Properties* ..... May 369
Lewis, J. R.: *Beryllides—A Rebuttal* Aug 569
Li, K. C.: *Chemical Processing Tungsten Ores and Concentrates* ... June 413
Linde Co., div. of Union Carbide Corp.: *Plasmarc Furnace, A New Concept in Melting Metals* ... Dec 907
Lippart, T. E.: *Beryllides—A Discussion* Aug 568
Lockheed Missiles & Space Co.: *A Review of Superplasticity and Related Phenomena* ..... Dec 914

Mc

McCabe, C. L.: *Science Vs Engineering* May 345
McCullough, R. J.: *Plasmarc Furnace, A New Concept in Melting Metals* ..... Dec 907
McGee, L.: *Automatic Power Control for Electric-Arc Furnaces* Dec 912

M

Mackay, J. S. and Manes, M.: *Thermodynamics of Blast Furnace Operation* ..... Apr 308
Maehara, S., et al.: *Oxygen Steelmaking—Key to Japan's Increasing Capacity* ..... July 518
Mahla, E. M., et al.: *Refractory Metals Symposium* ..... Aug 595
Maltz, Joseph, et al.: *Refractory Metals Symposium* ..... Aug 595
Manes, M. and Mackay, J. S.: *Thermodynamics of Blast Furnace Operation* ..... Apr 308
Mannas, D. A. and Smith, J. P.: *Beryllium Intermetallic Compounds—Their Preparation and Fabrication* ..... Aug 575
Marinow, I., et al.: *Vapor Phase Metallurgy and Ceramics* ..... Oct 770
Marks, E. C. and Barber, J. C.: *Phosphorus Furnace Operations* Dec 902
Martin, R. L., et al.: *Electron-Beam Melting—Does It Improve the Properties of Metals and Compounds?* ..... Nov 812
Matthiessen & Hegeler Zinc Co.: *Production of Low-Lead Zinc at La Salle, Illinois* ..... Apr 319
Mauricio Hochschild & Cie.: *Copper Extraction and Refining at Mantos Blancos* ..... Jan 51
Medoff, J. I. and Miller, Arnold: *Electron Beam Induced Recrystallization* ..... Oct 764
Meers, J. T. and R. T. Dolloff: *Status and Future of Graphite and Refractory Compounds* ..... May 351
The Metallurgical Society of AIME: *Canada's First Conference of Metallurgists* ..... Nov 842
Journey to the Isles ..... Aug 590
Sweden—Key to Metallurgical Progress ..... Sept 657
Metzger, M.: *Effects of Surface and Environment on Strength* ..... Feb 139
Milford, F. J., et al.: *Status of Superconductivity* ..... Nov 836
Miller, Arnold and Medoff, J. I.: *Electron Beam Induced Recrystallization* ..... Oct 764
Miller, J. R.: *The Expanding Latin American Steel Industry* Jan 28
Morana, S. J. and Simons, G. F.: *Beryllium Extracted by The Fluoride Process* ..... Aug 571
Morgan, R. P. and Butler, T. E.: *Arc Melting in High-Vacuum Environments* ..... Mar 200
Arc Melting of Tungsten ... June 418
Morrison, W. Adair and Wright, Mary T.: *Origin and Support of Scientific Publications* ..... May 334
Moutot, Albert: *Automatic Blast Furnace Charging by Conveyor Belts* ..... Oct 754

N

National Carbon Co., Div. of Union Carbide Corp.: *Status and Future of Graphite and Refractory Compounds* ..... May 351
National Steel Corp.: *Blast Furnace Practice of Tomorrow* ..... Apr 295
National Zinc Co. Inc.: *Production of Low-Lead Zinc at Bartlesville, Oklahoma* ..... Apr 320
Naval Air Materials Center: *Vacuum Analysis of Metals for Oxygen, Nitrogen, and Hydrogen* ... Aug 584
Nelson, F. D.: *Oxygen in the Open Hearth Part I. Hot-Metal Practice* ..... Apr 289
Newkirk, J. B.: *X-Ray Diffraction Microscopy* ..... Sept 661
Newman, L. S.: *Extractive Metallurgy of Aluminum; Carbon technology II* ..... June 443
New Mexico Institute of Mining and Technology: *Recovery Selenium from Sandstone Ores of New Mexico* ..... June 429
New York University: *The Senior Class—Metallurgy and Metallurgical Engineering* ..... Jan 63
What is Being Done About a National Academy of Engineering? ..... May 380
Nielsen, J. P.: *The Senior Class* ... Jan 63
Nishiwaki, M., et al.: *Oxygen Steelmaking—Key to Japan's Increasing Capacity* ..... July 518

O

Ostrowski, E. J. et al.: *Blast Furnace Practice of Tomorrow* ..... Apr 295

P

Pehlke, Robert D.: *Charcoal Iron Smelter Becomes Historic Site* Oct 780
Pennsylvania State University: *The Impact of Materials Science on Universities* ..... May 347
Pierce, J. F., Sr. and Enterline, S. M.: *Amax Zinc Refiner* ..... Sept 653
Pittsburgh Coke and Chemical Co.: *Thermodynamics of Blast Furnace Operation* ..... Apr 308
Planta Siderurgica de Chimbote, Peru: *Steelmaking in Peru* ..... Jan 46
Porter, J. L.: *Extractive Metallurgy of Aluminum; Alumina II* ... June 443
Purdue University: *Casting Small Specimens of Refractory Metals* June 411

R

Ransley, C. E.: *Refractory Carbides and Borides for Aluminum Reduction Cells* ..... Feb 129
Regelin, D. H., et al.: *Future of Ironmaking* ..... Oct 749
Rensselaer Polytechnic Institute: *Effect of Microstructure on High Temperature Properties* ..... May 369
Reynolds Metals Co.: *Extractive Metallurgy of Aluminum* ..... June 442
Richards, N. E.: *Extractive Metallurgy of Aluminum; Aluminum production III* ..... June 445
Rinesch, R. F.: *Controlled Heat Balance in the LD Process* ..... July 497
Rocquet, Paul and Adam-Gironne, Jean: *Bath-Slag Reactions in the Kaldo Process* ..... July 502
Roederer, C., et al.: *Technology and Metallurgy of the OLP Process* Aug 579
Romig, O. E.: *Slides for Technical Talks* ..... Sept 632
Royal Netherlands Blast Furnace and Steelworks, N.V.: *Basic Oxygen Steel at Hoogovens* ..... July 510
Rueckl, R. L. and Snow, R. B.: *Petrographic Examination of a Quenched Blast-Furnace Burden* May 359

S

St. Germain, F. and Slosarik, S. E.: *Introduction to Hot-Pressed Tungsten* ..... June 421
St. Joseph Lead Co.: *Production of Low-Lead Zinc at Josephtown, Pennsylvania* ..... Apr 321
Sawbrook Steel Castings Co.: *Electric Furnace Conference Plant Trips* Dec 881
Schneider, H. Guenther: *Eastern Germany—High Temperature Conference* ..... Aug 599
Schrader, C. F. and Dancy, T. E.: *Working of Cast Structures* Feb 142
Schultz, K. H.: *Production of Low-Lead Zinc at Amarillo, Texas* Apr. 317
Scott, T. R.: *Alumina: By Acid Extraction* ..... Feb 121
Seagle, S. R., et al.: *Electron-Beam Melting—Does It Improve the Properties of Metals and Compounds?* ..... Nov 812
Shearman, Robert W.: *Canada's First Conference of Metallurgists* Nov 842
Journey to the Isles ..... Aug 590
Sweden—Key to Metallurgical Progress ..... Sept 657
Simons, G. F. and Morana, S. J.: *Beryllium Extracted by the Fluoride Process* ..... Aug 571
Slosarik, S. E. and St. Germain, F.: *Introduction to Hot-Pressed Tungsten* ..... June 421
Smit, R. and Lanzing, P. W. A.: *Basic Oxygen Steel at Hoogovens* July 510
Smith, J. P. and Mannas, D. A.: *Beryllium Intermetallic Compounds—Their Preparation and Fabrication* ..... Aug 575
Snow, R. B. and Rueckl, R. L.: *Petrographic Examination of a Quenched Blast-Furnace Burden* May 359
Sociedad Mixta Siderurgica Argentina: *Argentina's First Integrated Steel Plant* ..... Jan 43
Société Lorraine de Laminage Continu (SOLLAC): *Bath-Slag Reactions in the Kaldo Process* July 502
Kaldo Moves Forward ..... Jul 505
Solar, Div. of International Harvester Co.: *Introduction to Hot-Pressed Tungsten* ..... June 421
Stafford, D. H. and Hughen, M. L.: *Production of Low-Lead Zinc at Blackwell, Okla.* ..... Apr 316
Stapleton, J. M., et al.: *Future of Ironmaking* ..... Oct 749
Starratt, F. W.: *Duluth and Taconite* Apr 299
Steel Company of Canada Ltd.: *Mechanical Working Conference Features Flat Rolled Products* May 378
Steigerwald, E. A., et al.: *Refractory Metals Symposium* ..... Aug 595
Stephenson, R. L., et al.: *Future of Ironmaking* ..... Oct 749
Stora Kopparberg Corp.: *Siderurgia-America Latina* ..... Oct 775
Stone, Joseph K.: *Growth of the LD Process* ..... July 509
Strassburger, J. H. et al.: *Blast Furnace Practice of Tomorrow* Apr 295
Strategic-Udy Metallurgy Ltd.: *High-Carbon Ferrochrome by the Strategic-Udy Process* ..... Dec 897

T

Tanenbaum, M. and Wright, W. V.: *Superconductivity and Superconductors* ..... May 367
Tankins, E. S. and Gokcen, N. A.: *Vacuum Analysis of Metals for Oxygen, Nitrogen, and Hydrogen* ..... Aug 584
Tennessee Valley Authority: *Phosphorus Furnace Operations* ..... Dec 902
Thompson Ramo Wooldridge Inc.: *Refractory Metals Symposia; I. Chicago—Ductility* ..... Aug 595
Tungsten—Its High-Temperature Reactivity ..... June 424
Todd, D. E.: *Oxygen in the Open Hearth Part II. Cold-Metal Practice* ..... Apr 292
Todd, J. B., Jr.: *Extractive Metallurgy of Aluminum; New processes and materials* ..... June 445
Trentini, B., et al.: *Technology and Metallurgy of the OLP Process* Aug 579
Tupper, Fernando Aguirre: *Latin American Iron and Steel Institute* ..... Jan 25
Turkdogan, E. T., et al.: *The Formation of Iron Oxide Fume* ..... July 521

U

Urich, D. M. and Berkhahn, R. W.: *Grate-Kiln Pelletizing of Iron Concentrates* ..... Apr 303
Underwood, Ervin E.: *A Review of Superplasticity and Related Phenomena* ..... Dec 914
Union Carbide Metals Co.: *Arc Melting in High-Vacuum Environments* Mar 200
Arc Melting of Tungsten June 418
On Site Lime for Basic Oxygen Steel ..... Sept 638

United Austrian Iron and Steel Works (VOEST): *Controlled Heat Balance in the LD Process* July 497
University of Illinois: *Effects of Surface and Environment on Strength* Feb 139
Electronic Structure and Alloy Chemistry of Transition Elements May 371
University of Michigan: *Charcoal Iron Smelter Becomes Historic Site* Oct 780
US Air Force: *Beryllides—A Discussion* Aug 568
Refractory Metals Symposia; I. Chicago—Oxidation Aug 598
US Atomic Energy Commission: *Federal Support of Materials Research* Mar 181
US Bureau of Mines: *Operation of a Bureau of Mines Metallurgy Research Center* Mar 214
US Department of Defense: *Interdisciplinary Laboratory Program in Materials Science* Sept 666
USINOR: *Automatic Blast Furnace Charging by Conveyor Belts* Oct 754
U.S. Metals Refining Co.: *Amax Zinc Refiner* Sept 653
US Navy: *Refractory Metals Symposia* Aug 595
U.S. Steel Corp.: *The Case for Whisker Reinforced Metals* Nov 809
The Formation of Iron Oxide Fume July 521
Future of Ironmaking Oct 749
Petrographic Examination of a Quenched Blast-Furnace Burden May 359
Slides for Technical Talks Sept 632
Status of Basic Refractory Technology Mar 218

V

Van Aken, J. S.: *Production of Low-Lead Zinc at Bartlesville, Okla.* Apr 330
Vayssiere, P., et al.: *Technology and Metallurgy of the OLP Process* Aug 579
Vicars, Earl C. and Yost, Charles F.: *Interdisciplinary Laboratory Program in Materials Science* Sept 666

W

Wah Chang Corp.: *Chemical Processing Tungsten Ores and Concentrates* June 413
Electron Beam Applications to Refractory Metals Mar 204
Wheeling Steel Corp.: *Production of Lead Zinc for Continuous Galvanizing; Introduction* Apr 315
Winters, J. F.: *Production of Low-Lead Zinc at Josephtown, Pa* Apr 321
Wood, D. L. and Geroulo, W. J.: *1961 Salary Survey* Sept 644
Work, Harold K.: *What Is Being Done About A National Academy of Engineering?* May 380
Wright, Mary T. and Morrison, W. Adair: *Origin and Support of Scientific Publications* May 334
Wright, W. V. and Tanenbaum, M.: *Superconductivity and Superconductors* May 367
Wyman-Gordon Co.: *Forging Beryllium Powder* Feb 149

Y

Yawata Iron & Steel Co., Ltd.: *Oxygen Steelmaking—Key to Japan's Increasing Capacity* July 518
Yost, Charles F. and Vicars, Earl C.: *Interdisciplinary Laboratory Program in Materials Science* Sept 666
Youngstown Sheet & Tube Co.: *Arc Melting in High-Vacuum Environments* Mar 200
Arc Melting of Tungsten June 418

Professional News

A

Acid Converter and Basic Oxygen Steel Committee:
Report Apr 285
Advanced Electronic Materials Conference:
1962 Conference Program July 542
Alexander, Peter P.:
Obituary Mar 240
Alpha Sigma Mu: Apr 325
AIME:
Annual Meeting, 1962 Program Jan 71
Annual Meeting Speakers Listed Feb 154
Annual Meeting Summary May 364
1963 Annual Meeting Nov 843
Dec 924
AIME-ASM Joint Membership Feb 155
Dec 925
Lloyd E. Elkins, 1962 President Feb 113
Karl Fetters, 1963 President-Elect July 532
New Gulf Coast Section Jan 67
New Lone Star Section Jan 67
New York Section:
Visit to New York Naval Shipyard July 538
New York Section, Physical Metallurgy Group May 391
Nominations for 1963 officers July 534
American Society for Metals:
AIME-ASM Joint Student Membership Feb 155
Dec 925
1963 officers Dec 927
Ansell, G. S.:
Hardy Gold Medal Winner Jan 68
Association of Iron & Steel Engineers:
1962 Annual Convention Nov 845
Aston, James:
Obituary Nov 852
Atkinson, T. A.:
Director, AIME July 536
Awards:
Robert H. Richards Award
J. E. Johnson, Jr. Award
William Lawrence Saunders Gold Medal Award
Hal Williams Hardinge Award
Mathewson Gold Medal
Extractive Metallurgy Division Award
Benjamin F. Fairless Award
Anthony F. Lucas Award
Rossiter W. Raymond Award Jan 67

B

Barrett, Charles S.:
IMD Director, 1962 Apr 325
Bidula, Ronald R.:
Reinartz Scholarship Winner Sept 675
Blast Furnace, Coke Oven, and Raw Materials Conference, 1962:
Program Mar 197
Summary June 432
Blast Furnace, Coke Oven, and Raw Materials Committee:
Report Apr 287

C

Canadian Institute of Mining and Metallurgy:
First Conference of Metallurgists Nov 842
Chambers, Frank W.:
Obituary June 456
Chemical Abstracts:
New section, extractive metallurgy Jan 69
Chicago Section, AIME:
Modern iron production symposium Nov 843
Chipman, John:
Retires at MIT Aug 601
Cleveland section, NOHC:
Second Annual Conference Nov 846
Cole, Richard C.:
Vice President, AIME July 534
Cole, Sanford S.:
Director, AIME July 535
Cox, Charles B.:
Obituary Mar 240

D

Demand for Engineers:
NSF and EJC reports Mar 233
Sept 673
Diehl, Richard C.:
Obituary June 456
Doi, Y., and Kasai, K.:
Recipients of Hunt Award for 1961 Feb 155
Dorr, John V. N.:
Obituary Aug 606
Dowdey, Wayne L.:
Director, AIME July 535
Dryden, H. L.:
Recipient, Fritz Medal Oct 784

E

Education:
Alfred P. Sloan Foundation: grant to broaden engineering education Sept 630
Alpha Sigma Mu: establishes three new chapters Sept 630
Brown University: grant from Sloan Foundation Sept 630
Buhl Foundation: grant to Carnegie Institute of Technology Sept 630
Carnegie Institute of Technology: course in Thermodynamics in Physical Metallurgy Mar 191
Carnegie Institute of Technology: grant from Buhl Foundation Sept 630
Case Institute of Technology: gift for Beaumont Hall for Undergraduate Studies Jan 22
Charles & Rosana Batchelor Memorial, Inc.: grant to Stevens Institute for Ph.D. program in metallurgy Sept 630
College Employment Survey: Mar 191
Dartmouth College: grant from Sloan Foundation Sept 630
Denver, University of: institute (course) on Energetics in Metallurgical Phenomena May 340
Franklin Institute: science information service Jan 22
Johns Hopkins University: grant from Sloan Foundation Sept 630
Lafayette College: election of officers by John Markle Society June 410
Massachusetts Institute of Technology metallurgy education conference Apr 248
Massachusetts Institute of Technology: seminar on Premium Quality Investment Castings May 340
Massachusetts Institute of Technology: summer course on Metallurgy of Iron and Steelmaking June 410
Michigan, University of: course on physical properties of ceramics May 340
Michigan, University of: metallurgical society elects officers Apr 248

Minnesota, University of: Information Retrieval Institute ..... June 410
Missouri, University of: organization of Missouri School of Mines research laboratories ..... Mar 191
Newark College of Engineering: $7 million expansion of facilities ..... Mar 191
Oak Ridge Institute of Nuclear Studies: special course ..... Sept 630
Ohio State University: lecture series on Fundamental Problems in Materials Science ..... Jan 22
Ohio State University: new metallurgical engineering building Apr 248
Pennsylvania State University: one-week courses in Mechanical Properties and Design, Dislocations and Mechanical Properties, and Theoretical and Experimental Continuum Mechanics ..... Mar 191
Polytechnic Institute of Brooklyn: new Long Island Graduate Center ..... June 410
Polytechnic Institute of Brooklyn: seminar for high school students ..... June 410
Princeton University: grant from Sloan Foundation ..... Sept 630
Rensselaer Polytechnic Institute: annual Technical Writers Institute ..... Mar 191
Rochester, University of: grant from Sloan Foundation ..... Sept 630
Rutgers University: conference on New Aspects of Mechanical Properties of Materials ..... Aug 248
South Dakota School of Mines & Metallurgy: Staff additions Sept 630
Stanford University: $1.5 million gift for new engineering building Jan 22
Stevens Institute of Technology: plans Ph.D. program in metallurgy Sept 630
Tilton School: engineering research conferences ..... June 410
Electric Furnace Committee ..... Dec 876
Electric Furnace Conference, 1961: Summary ..... Mar 1962
Electric Furnace Conference, 1962: Program ..... Dec 871
Electric Furnace Executive Committee: Report of the Chairman ..... Dec 877
Elkins, Lloyd E.: President, AIME, 1962 ..... Feb 113
Elliott, J. F.: 1963 Howe Lecturer ..... Aug 604
Emerick, Harold B.: ISD Director, 1962 ..... Apr 324
Engineering: A definition ..... Feb 154
Engineering Foundation: A. M. Gaudin retires as board chairman ..... Aug 603
Engineering Societies Library: ..... June 448
Engineers Joint Council: Walker named president ..... Jan 69
Demand for engineers ..... Sept 673
Engineering Research Needs, a report by Engineering Research Committee ..... July 527
Eugene Wall, Information Director Aug 601
Extractive Metallurgy: Future of Students Discussed Sept 677
Extractive Metallurgy Division: Know Your Society ..... June 450
Publication Procedures ..... June 451
W. R. Opie, Chairman ..... Feb 119

F

Fairless, Benjamin F.: Obituary ..... Feb 160
Fairman, James F.: President, United Engineering Trustees ..... Jan 69
Fellows: Special Nominating Committee ..... Jan 67
Fetters, Karl L.: President, The Metallurgical Society Feb 118
Fetters, Karl L.: AIME President-Elect, 1963 ..... July 532
Florida, Univ. of: Deformation Twinning Conf. Planned Nov 844
Frank J. Tone Award: ..... Oct 783

G

Gaudin, A. M.: Retires as Engineering Foundation board chairman ..... Aug 603
Gilmore, Robert B.: Vice President, AIME ..... July 534

H

Hardy Gold Medal ..... Jan 68
Harris, William J. Jr.: Director, AIME ..... July 535
IMD Director, 1962 ..... Apr 325
Havas, George: Obituary ..... May 387
Haverstraw, Robert: Winner, Metallurgical Society Student Paper Contest ..... May 386
Heck, Frank G.: Obituary ..... May 387
Hennebach, Ralph L.: Treasurer, The Metallurgical Society Apr 322
Hibbard, W. R. Sr.: Obituary ..... Apr 335
Holloman, J. H.: Assistant Secretary of Commerce June 447

I

Indian Institute of Technology ..... Nov 844
Institute of Metals Division: David Swan, Chairman ..... Feb 119
Deformation Twinning Conf. Planned Nov 844
International Conference on Fracture: 1962 Conference Program ..... July 494
Iron and Steel Institute (London): Annual general meeting ..... Aug 590
Iron and Steel Division: B. M. Larsen, Chairman ..... Feb 119
Know Your Society ..... Aug 604

J

Jets: Junior Engineering Technical Society May 381
John Fritz Medal: ..... Oct 784
Jones, Edward S.: Obituary ..... Oct 785
Jones, T. D.: Retires as EMD Treasurer ..... June 450
Journal of Metals: Back volumes ..... June 447
Index to vol. 13 (1961) ..... Feb 161

K

Kanpur Indo-American Program: Indian Institute of Technology ..... Nov 844
Kasai, K., and Doi, Y.: Recipients of Hunt Award for 1961 Feb 155
Kuhlmann, August M.: Recipient, Tone Award ..... Oct 783

L

Larsen, B. M.: Division Chairman, ISD ..... Feb 119
Lee, Albert E. Jr.: EMD Director, 1962 ..... Apr 324
Legion of Honor Members Named Dec 925
Lehigh Valley Section, AIME: All-Day Meeting ..... Dec 927
Leszynski, Werner: Obituary ..... Oct 785
Lone Star Section: Formation of ..... Jan 68
Long, Carleton C.: Vice President, AIME ..... July 534

M

Massachusetts Institute of Technology: John Chipman retires ..... Aug 601
Materials Research Seminar, 1962 ..... May 381
Mechanical Working Conference, 1962: May 378
Mechanical Working Conference, 1963: Nov 787
Metal Powder Industries Federation: Annual technical conference, 1962 Aug 558
Intl. Powder Metallurgy Conf. ..... Nov 844
Minnesota section, AIME: Annual Meeting ..... Apr 299
Morse, R. A.: Vice President, AIME ..... July 535

N

National Academy of Engineering? An EJC Report ..... May 380
National Open Hearth Steel Committee: Buffalo Meeting, 1961 ..... Jan 71
Buffalo Meeting, 1962 ..... Dec 925
Chicago Meeting, 1962 ..... May 390
Eastern section, 1961 Annual Meeting Mar 236
Local Section Reports ..... Apr 282
Nominations for 1963 Officers ..... Nov 846
Southwestern Section Meeting ..... Dec 926
National Open Hearth Steel Conference, 1962: ..... June 432
Program ..... Mar 194
National Open Hearth Steel Conference, 1963: ..... Aug 604
New England Regional Conference, 1962: Apr 288, July 533
New England Regional Conference, 1963: Oct 784
New York Naval Shipyard: Visit of New York Section, AIME July 538
Nuclear Congress, 1962: ..... May 344
Nuclear Metallurgy, vol. VIII ..... Dec 925

O

Opie, W. R.: Division Chairman, EMD ..... Feb 119

P

Pacific Northwest Regional Conference, 1962 ..... Apr 323
Pacific Southwest Minerals Industry Conference, 1962: ..... Mar 234
Parks, Donald A.: Assistant Secretary, Metallurgical Society ..... Sept 673
Peace Corps, Opportunities in ..... Sept 676
Pellier, Mrs. Laurence: Society of Women Engineer's Achievement Award ..... Aug 602
Physical Metallurgy Group: New York Section, tour of Bell Labs May 391
Pidgeon, L. M.: EMD Lecturer, 1963 Annual Meeting June 450
Pittsburgh Section: Off-the-Record Meeting, 1961 ..... Feb 156
Pittsburgh Section: Off-the-Record Meeting, 1962 ..... Oct 782
Powder Metallurgy: Int'l Conference Planned ..... Nov 844
Proceedings volumes: price increase ..... Feb 154

R

Refractory Metals Symposium, 1962: Program ..... Mar 187
Robert H. Hunt Award: Presented to Doi and Kasai ..... Feb 155
Rocky Mountain Mineral Conference, 1962: ..... July 533, Nov 821
Romig, O. E.: Slides for Technical Talks ..... Sept 632

S

Salary Survey, 1961: ..... Sept 644
Scaff, J. H.: Director, AIME ..... July 535
IMD Director, 1962 ..... Apr 325
Metallurgical Society President-Elect, 1963 ..... July 532
Schlechten, A. W.: EMD Director, 1962 ..... Apr 324
Schumacher, E. E.: ..... July 536
Schuhmann, R. Jr.: EMD Director, 1962 ..... Apr 324
Senior Class in Metallurgy ..... Jan 63
Sims, Clarence E.: Director, AIME ..... July 535
Slides for Technical Talks ..... Sept 632
Smith, Henry DeWitt: An Appreciation ..... Dec 890
Society of Mining Engineers: Fall Meeting, 1962 ..... Dec 926
Society of Women Engineers: Achievement award to Mrs. Pellier Aug 602
Soler, Gilbert: Obituary ..... Feb 160
Stephenson, William B.: Vice President, AIME ..... July 534
Student Prize Paper: Effect of Oxygen On The Evaporation Rate of Copper ..... May 386
Swan, David: Division Chairman, IMD ..... Feb 119

T

Taylor, William Jeffery: Obituary ..... July 544
Tenenbaum, Michael: ISD Director, 1962 ..... Apr 324
The Metallurgical Society: Deformation Twinning Conf. Planned Nov 844
The Metallurgical Society: Directors ..... Apr 324
Fall Meeting 1961 Summary ..... Feb 136
Fall Meeting, 1962 Program ..... Sept 681
J. H. Scaff, 1963 President-Elect July 532
Know Your Society ..... May 384
Parks Named Assistant Secretary Sept 673
President Karl L. Fetters ..... Feb 118
Ralph L. Hennebach, treasurer ..... Apr 322
Student Paper Contest ..... May 386
Tools for Freedom ..... Dec 926

U

United Engineering Center: Dedication ..... Jan 57
Unit Processes in Hydrometallurgy: Symposium, 1963 Annual Meeting June 450
United Engineering Trustees: Fairman named president ..... Jan 69

W

Walker, Eric A.: President, Engineers Joint Council Jan 69
Wall, Eugene: Information Director, EJC ..... Aug 601
Weiss, Norman L.: Vice President, AIME ..... July 534
Whorton, L. P.: Director, AIME ..... July 535
Wilder, Arthur B.: ISD Director, 1962 ..... Apr 324

New Books and Authors*

A

Advances in Electron Tube Techniques ..... Jan 8
Agglomeration ..... June 408
Anodic Oxide Films ..... Mar 190

B

Bar and Allied Products ..... Apr 262
Bunshah, Rointan F., *ed*: **Transactions of the Vacuum Metallurgy Conference—1960** ..... Apr 252

C

Coffinberry, A. S. and Miner, W. N.; *eds.*: **The Metal Plutonium** Mar 174

D

De, Anil K.: **Separation of Heavy Metals** ..... May 343
Dennis, W. H.: **Metallurgy of the Non-Ferrous Metals** ..... Aug 550
Dieter, George E. Jr.: **Mechanical Metallurgy** ..... July 473

E

Earhart, E. W. and Griffin, John F.; *eds.*: **Bar and Allied Products** Apr 262
Egli, Paul H., *ed.*: **Thermoelectricity** Mar 174
Electrochemistry of Semiconductors, The ..... Sept 625

F

Ferrand, L.; **History of the Science, Technology, and Industrial Development of Aluminum, Part II, The Present (1945-1961)** Nov 794
Finniston, H. M. and Howe, J. P.; *eds.*: **Metallurgy and Fuels, Vol. II, Basic Fuels and Phenomena** Nov 794
Fowler, R. D., Lord, W. B. H., and Grison, E., *eds.*: **Plutonium 1960** May 343

G

Griffin, John F. and Earhart, E. W., *eds.*: **Bar and Allied Products** Apr 262
Grison, E., Lord, W. B. H., and Fowler, R. D.; *eds.*: **Plutonium 1960** May 343
Gschneider, Karl A. Jr.: **Rare Earth Alloys** ..... Jan 4

H

Harwood, J. J. and Semchyshen, M., *eds.*: **Refractory Metals and Alloys** ..... July 473
History of the Science, Technology, and Industrial Development of Aluminum, Part II, The Present (1945-1961) ..... Nov 794
Holmes, P. J., *ed.*: **The Electrochemistry of Semiconductors** ..... Sept 625
Houwink, A. L. and Spit, B. J., *eds.*: **The Proceedings of the European Regional Conference on Electron Microscopy, Delft 1960, Vol. 1** ..... June 408
Howe, J. P. and Finniston, H. M.; *eds.*: **Metallurgy and Fuels, Vol. II, Basic Fuels and Phenomena** Nov 794

K

Kieber, Eugene V., *ed.*: **Rare Earth Research** ..... Feb 100
Knepper, William A., *ed.*: **Agglomeration** ..... June 408
Kriegel, W. Wurth and Palmour, Hayne III, *eds.*: **Mechanical Properties of Engineering Ceramics** ..... Oct 730

L

Lord, W. B. H., Grison, E., and Fowler, R. D., *eds.*: **Plutonium 1960** May 343

M

Mechanical Metallurgy ..... July 473
Mechanical Properties of Engineering Ceramics ..... Oct 730
Metallurgy and Fuels, Vol. II, Basic Fuels and Phenomena ..... Nov 794
Metallurgy of Elemental and Compound Semiconductors ..... Feb 100
Metallurgy of the Non-Ferrous Metals Aug 550
Miner, W. N. and Coffinberry, A. S., *eds.*: **The Metal Plutonium** Mar 174

P

Palmour, Hayne III and Kriegel, W. Wurth, *eds.*: **Mechanical Properties of Engineering Ceramics** Oct 730
Parker, Rollin J., and Studders, Robert J.: **Permanent Magnets and Their Applications** ..... Dec 886
Permanent Magnets and Their Applications ..... Dec 886
Physical Chemistry of Process Metallurgy ..... Apr 252
Plutonium 1960 ..... May 343
Progress in Nuclear Metallurgy: Metallurgy and Fuels, Vol. II ..... Nov 794

R

Raimes, Stanley: **The Wave Mechanics of Electrons in Metals** ..... Nov 794
Rare Earth Alloys ..... Jan 4
Rare Earth Research ..... Feb 100
Refractory Metals and Alloys ..... July 473

S

Semchyshen, M. and Harwood, J. J., *eds.*: **Refractory Metals and Alloys** ..... July 473
Semenchenko, V. K.: **Surface Phenomena in Metals and Alloys** Oct 742
Separation of Heavy Metals ..... May 343
Slater, David, *ed.*: **Advances in Electron Tube Techniques** ..... Jan 8
Spit, B. J. and Houwink, A. L., *eds.*: **The Proceedings of the European Regional Conference on Electron Microscopy, Delft 1960, Vol. 1** ..... June 408
Structural Processes in Creep ..... Sept 625
Studders, Robert J., and Parker, Rollin J.: **Permanent Magnets and Their Applications** ..... Dec 886
Surface Phenomena in Metals and Alloys Oct 742

T

The Effect of the Various Steelmaking Processes on the Energy Balances of Integrated Iron- and Steelworks, Special Report 71 ..... Oct 730
The Metal Plutonium ..... Mar 174
The Proceedings of the European Regional Conference on Electron Microscopy, Delft 1960, Vol. 1 June 408
Thermoelectricity ..... Mar 174
Thomas, Gareth: **Transmission Electron Microscopy of Metals** ..... Aug 550
Toughness and Brittleness in Metals Jan 4
Transactions of the Vacuum Metallurgy Conference—1960 ..... Apr 252
Transmission Electron Microscopy of Metals ..... Aug 550

W

Wave Mechanics of Electrons in Metals, The ..... Nov 794

Y

Young, L.: **Anodic Oxide Films** ..... Mar 190

* This is not a complete list of all books mentioned during the year. All books which were reviewed, and their authors, are listed. Other books of particular interest are also listed.

Are You Keeping up With Research In Your Field?

TRANSACTIONS

OF THE METALLURGICAL SOCIETY OF AIME

For your subscription, write the AIME Order Department, 345 East 47th Street, New York 17, N. Y. Complete sets and bound volumes are available.

$7.50 to AIME Members
Non-members: $30.00 in North, South & Central America, $32.00 Elsewhere.